



Letter to the Editor

Working plan update for medical biochemistry laboratories during the COVID-19 pandemic

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In December 2019, a novel coronavirus outbreak, first reported in Wuhan, China, soon spread around the world and was declared a pandemic by the World Health Organization (WHO) on March 11, 2020. The causative microorganism has been identified as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the disease was named COVID-19 [1, 2]. As of April 27, 2020, a total of 2.991.073 cases and 206,822 deaths have been reported in 210 countries around the world. In Turkey, 110.130 cases and 2.805 deaths have been reported [3, 4].

The COVID-19 outbreak created a highly risky and chaotic process for healthcare workers (HCW), and especially clinical laboratory workers. The prevention measures and treatment algorithms described by the authorities are changing every day. However, 24-hour study continuity by medical laboratories is indispensable for the diagnosis, treatment, and follow-up of COVID-19 patients.

There are cases of COVID-19 diagnosis and death among HCW worldwide, including in Turkey. As of April 8, 2020, 22.073 cases of COVID-19 among HCW from 52 countries have been reported to the WHO. However, at the present time, there is no systematic reporting of HCW COVID-19 infections to the WHO and this number probably does not represent the true number of global COVID-19 HCW infections [5].

The submission of biological materials, such as blood, urine, and stool samples, from COVID-19 patients requires laboratory workers to conduct a careful analysis, and the use of protective equipment, including gloves, surgical facemasks,

and visors, is important. The availability of N95 or similar facemasks is necessary for the safety of technical personnel in medical laboratories. At present, it is clear that SARS-CoV-2 is transmitted through the droplet route; however, it is still too early to say anything definitive about infection from biological materials.

Currently, the identification of this disease is mainly conducted using a nasopharyngeal swab, but the presence of SARS-CoV-2 RNA in the feces of COVID-19 patients indicates the possibility of transmission via the fecal-oral route [6].

Chen et al. [7] found that SARS-CoV-2 RNA testing was positive in the fecal samples of 66% of patients. In 64% of these patients, there was a positive viral RNA result in feces after pharyngeal samples were negative. For pharyngeal specimens, the duration of viral shedding from feces after negative conversion was reported as a mean of 7 days (range: 6-10 days), regardless of the severity of COVID-19. The demographic details, clinical features, and laboratory and radiological findings did not differ between patients with a positive or a negative fecal test result for SARS-CoV-2 RNA. The urine samples of 10 patients were examined for viral RNA, but it was not detected.

The possibility of fecal transmission is quite strong in COVID-19 according to the available literature, but it is not yet clear for other biological materials. During the COVID-19 pandemic, fecal samples sent to medical laboratories for reasons such as a fecal occult blood test or parasite search presents a risk. Postponing these tests is important for pandemic control and employee safety. Furthermore, the safe removal of sample-

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derived medical waste is an important issue that requires extra care and attention.

At present, the pandemic continues to spread rapidly throughout the world and the number of cases and deaths is increasing every day. We have no clear data on when the outbreak will end. Therefore, medical laboratories must use their human resources as effectively as possible. Those with a comorbidity known to put them at higher risk should not come to the hospital, and a smaller number of staff should perform only the most necessary tests and analyses.

Medical laboratories should supply sufficient kits and supplies for tests of ferritin, D-dimer, C-reactive protein, procalcitonin, complete blood count, blood gas, and erythrocyte sedimentation rate, which are used in the treatment and follow-up of COVID-19 patients. A sufficient quantity of personal protective equipment must also be provided. Laboratories must create and implement an adequate emergency action plan on their own terms during the COVID-19 pandemic. Employees should be informed about the process and the laboratory's new work plan. Medical laboratory services in hospitals are uninterrupted; therefore, the safety of laboratory workers is essential for sustainable medical laboratory services.

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